DATA MANAGEMENT & PROBABILITY: Collection and Organization of Data

Grade 2	Grade 3	Grade 4
Overall Expectation		
- collect and organize categorical or discrete primary data and display the data, using tally charts, concrete graphs, pictographs, line plots, simple bar graphs, and other graphic organizers, with labels ordered appropriately along horizontal axes, as needed	- collect and organize categorical or discrete primary data and display the data using charts and graphs, including vertical and horizontal bar graphs, with labels ordered appropriately along horizontal axes, as needed	- collect and organize discrete primary data and display the data using charts and graphs, including stem-and-leaf plots and double bar graphs
Specific Expectations		
- demonstrate an ability to organize objects into categories, by sorting and classifying objects using two attributes simultaneously	– demonstrate an ability to organize objects into categories, by sorting and classifying objects using two or more attributes simultaneously	
- gather data to answer a question, using a simple survey with a limited number of responses	– collect data by conducting a simple survey about themselves, their environment, issues in their school or community, or content from another subject;	- collect data by conducting a survey or an experiment to do with themselves, their environment, issues in their school or the community, or content from another subject, and record observations or measurements
- collect and organize primary data that is categorical or discrete (i.e., that can be counted, such as the number of students absent), and display the data using one-to-one correspondence in concrete graphs, pictographs, line plots, simple bar graphs, and other graphic organizers, with appropriate titles and labels and with labels ordered appropriately along horizontal axes, as needed	– collect and organize categorical or discrete primary data and display the data in charts, tables, and graphs (including vertical and horizontal bar graphs), with appropriate titles and labels and with labels ordered appropriately along horizontal axes, as needed, using many-to-one correspondence	- collect and organize discrete primary data and display the data in charts, tables, and graphs (including stem-and-leaf plots and double bar graphs) that have appropriate titles, labels, and scales that suit the range and distribution of the data, using a variety of tools

DATA MANAGEMENT & PROBABILITY: Data Relationships

Grade 2	Grade 3	Grade 4
Overall Expectations		
- read and describe primary data presented in tally charts, concrete graphs, pictographs, line plots, simple bar graphs, and other graphic organizers	- read, describe, and interpret primary data presented in charts and graphs, including vertical and horizontal bar graphs	- read, describe, and interpret primary data and secondary data presented in charts and graphs, including stem-and-leaf plots and double bar graphs
Specific Expectations		
- read primary data presented in concrete graphs, pictographs, line plots, simple bar graphs, and other graphic organizers, and describe the data using mathematical language	– read primary data presented in charts, tables, and graphs (including vertical and horizontal bar graphs), then describe the data using comparative language, and describe the shape of the data	- read, interpret, and draw conclusions from primary data from secondary data presented in charts, tables, and graphs (including stem-and-leaf plots and double bar graphs)
- pose and answer questions about class generated data in concrete graphs, pictographs, line plots, simple bar graphs, and tally charts	- interpret and draw conclusions from data presented in charts, tables, and graphs	- describe the shape of a set of data across its range of values, using charts, tables, and graphs
- demonstrate an understanding of data displayed in a graph, by comparing different parts of the data and by making statements about the data as a whole		- compare similarities and differences between two related sets of data, using a variety of strategies
- distinguish between numbers that represent data values and numbers that represent the frequency of an event	– demonstrate an understanding of mode, and identify the mode in a set of data.	- demonstrate, through investigation, an understanding of median and determine the median of a set of data

DATA MANAGEMENT & PROBABILITY: Probability

Grade 2	Grade 3	Grade 4
Overall Expectations		
- describe probability in everyday situations and simple games	- predict and investigate the frequency of a specific outcome in a simple probability experiment	- predict the results of a simple probability experiment, then conduct the experiment and compare the prediction to the results
Specific Expectations		
- describe probability as a measure of the likelihood that an event will occur, using mathematical language (i.e., impossible, unlikely, less likely, equally likely, more likely, certain)		
- describe the probability that an event will occur through investigation with simple games and probability experiments and using mathematical language	– predict the frequency of an outcome in a simple probability experiment or game, then perform the experiment, and compare the results with the predictions, using mathematical language	- predict the frequency of an outcome in a simple probability experiment, explaining their reasoning; conduct the experiment; and compare the result with the prediction
	- demonstrate, through investigation, an understanding of fairness in a game and relate this to the occurrence of equally likely outcomes	
		- determine, through investigation, how the number of repetitions of a probability experiment can affect the conclusions drawn